

Abandoned Art Nouveau as a research tool:

Comparing two different methods

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Abstract: This research is the extension of previous analysis on the abandoned Art Nouveau building in Italy (where this artistic and architectural tendency was named “Liberty”), starting from the study of the evolution changing of the appeal in this architectural style. Liberty was only popular during the period between the 19th century and the 20th century. The Liberty was characterized by a marked linear style and elegant decoration; it became quickly the main style of the growing bourgeoisie. This research will aim to examine the reasons because these particular buildings didn't acquire the “charm of ruin” after their closure and because they often suffer from complete abandon without meaningful chances of recovering. Many buildings in Italy can be clear examples of this condition. The methodology for the analysis of this Heritage at risk will be developed using the photogrammetric survey, using both a traditional 2D approach and the SFM solutions. The aim will be to gain a better understanding using fast and discrete techniques (a lot of these buildings are left to themselves and often protected from public intervention) and the creation of an archive of these findings. The observed buildings will be chosen in the city of Florence trying to extend the first part of the research that has been started a couple of years ago. In the city of Florence it is possible to appreciate several important buildings, good examples of this brilliant style.

The Architect Giovanni Michelazzi was one the most representative persons of the Liberty style in Tuscany, he passed away in the 1920, after designing many villas around Florence. The research will be carried out by observing and surveying two important buildings. These surveys will be a possible reference for a conservative intervention or at least a documentation of something that is getting lost. Using two different cameras is it possible to compare the results obtained, this will be an important step for further surveys and research in emergency situation. This project progress our research gaining more experience in photogrammetrical survey.

Keywords: Art Nouveau, Abandoned, SFM, Photogrammetrical Survey, Nikon D800, Nikon D60

Art Nouveau in Florence, two cases study.

Giovanni Michelazzi and the Liberty in Florence

Many examples of Liberty style (also known as Art Nouveau) as private houses, stores and public buildings are located in Florence, Montecatini Terme, Lucca and Viareggio. Liberty flourished in Tuscany in the period between 1880 and 1930, although masterpieces of this style have been designed in the first decades.

In Florence and Lucca the style was mainly used for private houses or – small villas (*villino*) – in residential areas just outside the city walls, while in Montecatini Terme and Viareggio the Liberty buildings were situated in the main streets, like hotels, thermal baths etc.

Liberty buildings suddenly moved to the country side, the first reason was the necessity of more space; this detailed, particular style needed spacious plots to express his virtuosity.

The best examples of Liberty applied to residential architecture are located in the elegant countryside of Florence, not far from city centre.

Numerous examples of Liberty architecture are still existing in Florence, many buildings with several functions can be considered masterpieces of Liberty Architecture: Orthodox Church 1899-1903 (Michele Preobrangensky and Architects Boccini and Paciarelli); Horticultural Garden 1880 (Giacomo Roster), Palazzo delle Poste e Telegrafi (literally Post Office) 1907 (Rodolfo Sabatini and Vittorio Tognotti, Villa Matilde Calenzano 1902-3(Dante Fantappiè).

The most influential figure in Florentine Liberty architecture is Giovanni Michelazzi, who loved ornamental whims.

The first Liberty building in the centre of Florence was “Casa Paggi” located in between of Via Brunelleschi e Via De’ Pecori.

The Architect Giovanni Paciarelli designed in 1903 the headquarter of “Grandi Magazzini Pola e Tedescan”; he changed his design style thanks to the support of his Architectural Assistant Giovanni Michelazzi, who had just finished to study.

This building had an important location at that time, it was on the right side of the triumphal arch in Piazza Vittorio Emanuele (today Piazza della Repubblica); this area was part of the important new Master Plan for Florence, that relocated the centre of the city exactly on that square, link point between Roman Axis Cardo and Decumano.

The modern façade was decorated with ceramic details made by Cantagalli (prestigious ceramic’s workshop close to Porta Romana) and as frequently in any Liberty Buildings, it has wrought-iron railings.

This evident intention to follow the Austrian Secession had been associated to Giovanni Michelazzi, the only one who was pursuing the first publications from the Viennese Wagnerschule.

Giovanni Michelazzi was born in the 1879 in Rome. He moved with his family to Lucca and finally Florence, where he became an Architect.

The first project was a small extension of an old Villa built in 1800, located in the area call “Poggio Imperiale” in Florence.

Despite to the fact the manufacture was modest; Giovanni Michelazzi was clearly well informed about the European Art Nouveau Style.

This style was the perfect union between the Austrian Secession Style and the local Art and Craft.

Liberty became popular among the local Artists and Artisans, well known for the high quality of graphic art and art craft. On the other hand Architects looked at it with extremely skepticism.

Giovanni Michelazzi was the only one who followed this path although he was often contested. The new expansions of the city were the perfect location for this new style, mainly affirmed in the typology of Villa. It is still possible to appreciate the only one successful example in the centre of Florence, “Casa Galleria Vichi”.

The first buildings were unfortunately destroyed: “Villino Ventilari” 1907 located in “Viale Giovanni Mazzini”, “Villino la Prora” 1910-11 located in “via Guerrazzi”. In the same period he designed also the two “Villini

Lampredi” located in Via Giano Della Bella and his masterpiece “Villino Broggi” located in Via Scipione Ammirato.

Villino Broggi was the first complete experiment of Liberty Architecture made by the eccentric Giovanni Michelazzi. The building was criticised however the popular magazine “Arti Decorative e Moderne” (literally Decorative Modern Arts) defined the building as a “good challenge against the local habits”.

The rich detailed facade mirrored the internal design; the internal space developed around a helical staircase covered with a glazed dome. The rail had the shape of the dragon and two dancing women; Galileo Chini decorated all the rooms and enriched the facade with coloured ceramics.

Despite the criticism he received, he had always remained coherent with his style, giving over to achieve the easy success. He killed himself on 24th of August 1924 leaving in Florence a prestigious example of the Liberty avant-garde.

Case Studies

Villini Lampredi, Firenze

The “Villini Lampredi”, designed by Giovanni Michelazzi, was built in 1908-09 in Via Giano Della Bella. Both Villas took the name of the company made up from the two brothers Giulio and Adolfo Lampredi.

The first building has been designed as a traditional Villa then moved according to the the Art Nouveau Style; two storeys villa enriched with typical flowery decorations. The facade is divided in three parts with horizontal stripes connected by a frame made by “bugnato piatto”. The central stripe is curved to balance the facade. Above the two windows at the second floor there are garlands on a contrasting red render. In the middle of the facade there is the main door, above it, the balcony linked to the door frame with two decorated bracket.

The second Villa has been designed with a completely contrasting procedure: the traditional elements almost disappeared; a circular window at the first floor is the beginning of a round wave that involves the entire facade.

Organic curve decorations affect the whole facade elements.

Different friezes are displayed above the windows. The facade is divided as in the other villa in three parts: the basement, the central part of the balcony and the final decorated stripe. The two basement windows have an abstract face shape. The balcony has two false columns; imaginary horses support the balcony made by wrought iron.

The stripe made with the famous Galileo Chini's ceramic underlined the intention, matching the decoration of the side balconies.

The structure was made with an old technique called “muri incatenati” (literally walls enchained); this technique tried to prevent damage caused by eathquakes.

The surrounded area is mainly residential, typical settlement of the outskirts expansion that happened during the beginning of 1900.

Both buildings are characterised by precious facade in which the flat surface seems to be flexible following the minimal variation of the single plans.

Everything has been drawn, from the balconies to the small windows in the ground floor. Fascinating details enriched the buildings. In both cases the internal setting out is quite traditional; they are still used and they are part of Florence building heritage.

Digital Survey

Sfm Solution

We used Agisoft Photoscan Pro 1.0.3, the program appeared easy and intuitive.

It is well known that the main needs to produce a good Photo scans are: a stable tripod and a high definition digital camera. Photos should have a total depth of field; the image should be generated from a lens with an almost “hyperfocal” setting, with all the elements of interest clear and readable. It’s important to photograph all the parts of the object; the methods is to divide the object with imaginary section planes, parallel to the surface to be photo scanned.

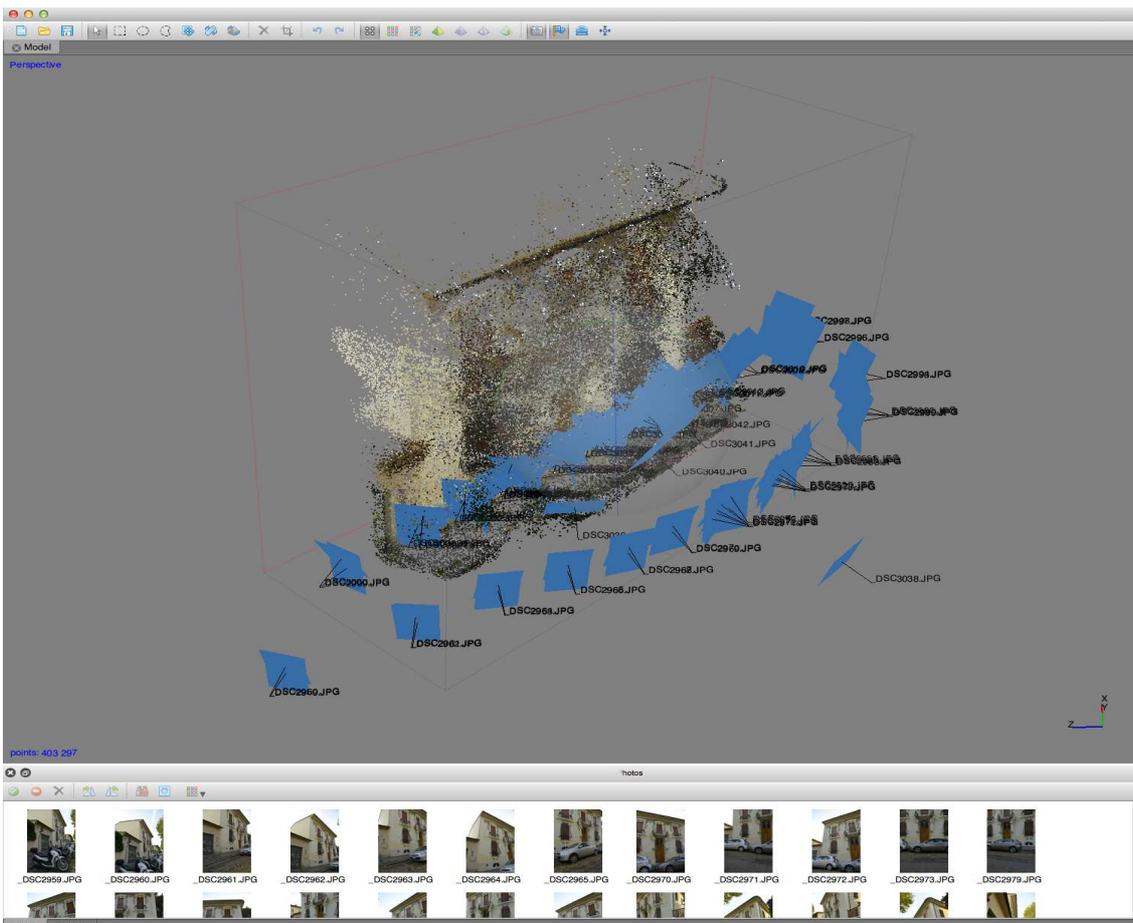


Fig. 1 – Computing Process

The photographer should move along the imaginary line on the floor (projection of the section plane) in regular intervals and with a set distance between each position proportionated to the field of view. In each shooting station it is a good idea to take photos from the bottom to the top, paying certain attention to the

floor, while this part should be quite hard to obtain in the final model if not correctly documented. It's necessary to take photos of all interesting particulars to obtain a detailed Photoscan result.

The ensuing process is the loading of all the images in the software. The result will be a complete 3D digital model created from the 2D information of the pictures. The ultimate result is a three-dimensional polygonal surface with a texture applied on it.

During the survey of the Liberty "Villini" the main difficulties encountered were related to the particular geometry of the detailed facade. Glazed and transparent surfaces made the computing process more complex, which took a long time to match the homologous points. This fact created false points into the point cloud. The reflecting and transparent surface confused the program because it could not match the homologous point of the close photos due to the reflections on the surface changed with the position where the photo had been taken. To analyse the decorations over the facades, as statues and organic engravings, we took the pictures from several positions.

In spite of the expectation both the Villas were easy to photograph; the environmental conditions (weather, light, disturbing objects) were absolutely acceptable, except for the presence of cars.

We could not use the tripod during the survey of Villino Adolfo Lampredi because of the narrow dimension of the street. The cameras used were Nikon D800 and Nikon D60.

The comparison between NikonD800 and NikonD60

We used two different cameras to photograph the facade: Nikon D800 and Nikon D60.

Nikon D60 with 18-55 F 3,5-5,6 lens, focus F8, shutter speeds 1/100 and 800ISO; Nikon D800 24-120 F4 lens, focus F8, 1/100 Shutter Speeds, 800 ISO. Both results were satisfying, however the photo made with Nikon D800 were more clear, bright and well defined as opposed to the photos taken with the D60; which were: grainy, less defined, darker and less detailed. We tested the two cameras using two different methods, we took the picture of the Villino Giulio Lampredi with the tripod and without tripod for the Villino Adolfo Lampredi. Although the subjects are different we can analyse the quality of the photogrammetrical survey, similar in the two case studies. It is always recommended to use the tripod during the survey campaign, however (as in our case) it is not always possible and with the correct weather condition and light, Photo Campaign will be satisfying.



Fig. 2 – Comparison of details “Villino Giulio Lampredi”-D800 vs D60 (Copyright Jacopo De Paola, Valentina Fantini, Stephane Giraudeau)

During the computing process using the program AgiSoft Photoscan 1.0.3 for Mac, we had more problems with the pictures taken with the Nikon D800; the high quality and large file size of the photos made the computing process really slow and the computer crashed many times. The mesh had to be very dense in terms of polygon count, the higher the count the more close, it would simulate reality. However, we reduced the mesh density by 82% to optimise the model because it was too dense to be legible.

We encountered no problem during the computing process using the Nikon D60, the dimension of the pictures were smaller than the others, and also the lower definition of the facades made the computer perform better.

The images of the two decorations show the density of the point cloud with a reduced number of polygons. We worked on the 3D Models fulfilling the holes created from the program; the 3dModel that came from the Nikon D800 Photo Campaign had a small range of errors, on the other hand it was really difficult to manage. In our research the number of errors were not important but the facility to handle the model made with the D60 rather than the model made with the D800, in our opinion the more easy you can work on the Mesh the less probability you have a low quality drawing, the post-production of the data obtained is always necessary.

The aim of the comparison was to decide which camera is better to do the photogrammetrical survey and in which situation.

This kind of survey is the quickest way to obtain really well defined data from the simple action of taking picture. The limit of the method is not only in the camera used, but in the power of the computer that is used to calculate the 3d Mesh from the pictures.



D 60



D 800

Fig. 3 – Villino Adolfo Lampredi-Comparison of the two cameras Nikon D60vs Nikon D800 (Copyright Jacopo De Paola, Valentina Fantini, Stephane Giraudeau)

We concluded analysing the two data that the choice of camera depends on the definition you want to achieve and the scale of the drawing you need to obtain from the 3dModel. However it is preferred to use the Nikon D800 for a photogrammetrical survey of small portions of the building, decorations and details; with a small number of pictures, therefore easy to calculate, the 3d model will be really defined and clear.

The Nikon D60 is the best choice for the survey of the facade or the whole building, because even if the number of the pictures taken will be high, the slower definition of the photos facilitates the computing process.

Conclusion

This research is a step forward of previous research started in 2012 with a Final dissertation about Abandoned Art Nouveau in Italy, these cases study are not abandoned or not well kept either but not considered as an important part of the Architectural history of Florence. This is the reason why many Liberty buildings were destroyed or abandoned.

The Art Nouveau in Italy was a brief but intense phenomena that involved all the disciplines, from the art and craft to building heritage. This style is mainly based on details decorations, small peculiarities that unfortunately get damaged easily subtracting to the building part of his charm. Only a rich archive of detailed information can keep this style alive.

During this research we came across several typology of Liberty building, all of them with different peculiarity.

Preserving details is always complicated, especially when lengthy bureaucratic procedures often delays any kind of interventions.

The archive can keep drawings and 3D models of the important built heritage of Italian history Architecture. Using SFM solution all of these historical references are easily rescued even if the building is damaged or not easily accessible.

Our goal is to revitalize the building heritage hoping to attract more attention to the Liberty avant-garde and at the same time to collect important information for any kind of further actions in order to preserve and recover the buildings, bring back to their original elegance.



Fig. 4 – Villino Adolfo Lampredi and Villino Giulio Lampredi (Copyright Jacopo De Paola, Valentina Fantini, Stephane Giraudeau)



Fig. 5 – Villino Giulio Lampredi (Copyright Jacopo De Paola, Valentina Fantini, Stephane Giraudeau)



Fig. 6 – Villino Adolfo Lampredi (Copyright Jacopo De Paola, Valentina Fantini, Stephane Giraudeau)



Fig. 7 – Villino Giulio Lampredi (Copyright Jacopo De Paola, Valentina Fantini, Stephane Giraudeau)



Fig. 8 – Villino Adolfo Lampredi-Comparison of the two cameras Nikon D60vs Nikon D800 (Copyright Jacopo De Paola, Valentina Fantini, Stephane Giraudeau)



Fig. 9 – Villino Giulio Lampredi-Comparison of the two cameras Nikon D60vs Nikon D800 (Copyright Jacopo De Paola, Valentina Fantini, Stephane Giraudeau)

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